SECTION A:	***QUALIFICATION DETAILS***														
QUALIFICATION DEVELOPER (S)	University of Botswana														
TITLE	Postgraduate Diploma in Statistics													***NCQF LEVEL***	*8*
FIELD	Natural, Mathematical and Life Sciences								***SUB-FIELD***		Statistics			***CREDIT VALUE***	125
New Qualification											*Review of Existing Qualification*				
SUB-FRAMEWORK		*General Education*									*TVET*			*Higher Education*	✓
QUALIFICATION TYPE	*Certificate*	*I*		*II*		*III*		*IV*		*V*		*Diploma*		*Bachelor*	
	Bachelor Honours							*Post Graduate Certificate*						*Post Graduate Diploma*	✓
	Masters										*Doctorate/ PhD*				

RATIONALE AND PURPOSE OF THE QUALIFICATION

RATIONALE:

Statistics, as an emerging field, is in high demand by professionals in different fields such as Education, Business, Engineering, Sciences, Agriculture, Social Sciences and others. Due to its potential applications in these fields. According to Human Resource Development Council (HRDC) 2016 report, Statistician is one of the top twenty occupations in high demand in Botswana. Further, one of the recommendations from the employers of Research, Innovation, Science and Technology (RIST) sector is to increase enrolment in postgraduate studies in order to increase graduates with research skills.

The PG Diploma in Statistics (PGDST) qualification will cater for the statistical needs of working professionals and graduates who are aspiring for employment in industries, government ministries, and in the private and

parastatal sectors, where statistics are applied. The qualification aims to provide the knowledge and hands-on training in some selected areas of statistics and to equip students with the use of statistical tools in the analysis of industrial, social, agricultural and business data. Furthermore, for those with lower-level passes (third class or pass) at first degree in Statistics, the qualification will leverage them for higher degrees in Statistics such as MA (Statistics), MSC (Statistics) and subsequently Doctor of Philosophy (PhD) in Statistics. The qualification is also meant to further equip students with weak passes (third class or pass) in B.Sc. or BA Statistics degree with skills to proceed to a master's degree and subsequently PhD in Statistics. The qualification should be a stand-alone qualification for one year to cater for the larger client and those on it will get a PGD degree in Statistics. Furthermore, the qualification is expected to help the graduates to undertake higher level studies such as BSc (Hons), Masters and PhD programs in statistics and its allied subjects such as Actuarial Sciences, Data Science/Analytics, Bioinformatics, Risk Management and others.

PURPOSE: The purpose of this qualification is to produce a graduate with the knowledge, skills, and competences to:

- Perform data collection, design experiments or surveys and analyze various types of data found in different fields of specialization in Botswana.
- Solve statistics-related problems, engage in critical thinking and have other generic skills such as written and oral communication, computer-literacy and great interpersonal skills infused through assessments and multicultural environment offered during training.
- Demonstrate initiative and responsibility, perform their duties in a professional and ethical manner, and be able to provide intellectual leadership.

ENTRY REQUIREMENTS (including access and inclusion)

- Bachelor’s degree in Statistics at NCQF level 7 or equivalent
- RPL shall be applicable

SECTION B	***QUALIFICATION SPECIFICATION***
GRADUATE PROFILE (LEARNING OUTCOMES)	***ASSESSMENT CRITERIA***
LO1- Design census, market surveys, randomized studies, opinion polls, sample surveys, etc.	1.1 Formulate research enquiry as a statistical problem with the associated research questions adhering to relevant ethical procedures. 1.2 Formulate an appropriate sample design, critically evaluate, and determine correct data analysis method. 1.3 Demonstrate highly specialized execution of the survey, analysis, and interpretation of results. 1.4 Provide highly specialized advisory and consultancy services to organizations from different industries.
LO2 –Apply specialized probability theory and Mathematical methods to measure uncertainty of experiments with applications to different industries.	2.1 Demonstrate highly specialized skills in calculation of probabilities and other related quantities using probability distributions. 2.2 Critically evaluate different probability theories to inform accurate decision making. 2.3 Demonstrate the ability to derive mathematical expectations, generating functions, marginal and conditional distributions relevant to common industrial problems.
LO3 – Provide and apply univariate and multivariate statistical methods, theory of estimation and hypothesis testing to solve industry problems.	3.1 Conduct an appropriate parametric and non-parametric statistical test for various univariate and multivariate hypotheses arising from industrial problems. 3.2 Apply correct estimation techniques such as maximum likelihood, least squares and moment methods to compute point and interval estimators for different industrial problems.
LO4 – Use a statistical software to extract, transform, explore and analyse data.	4.1 Capture and store data into an appropriate format for data analysis. 4.2 Import, clean and transform data from other data management software to ensure high quality of the data sets before analysis. 4.3 Carry out exploratory data analysis using different statistical techniques such as graphs and tables to aid interpretation of the results and present main data features. 4.4 Demonstrate skills to use different software to fit appropriate statistical model to the given data.

SECTION C	QUALIFICATION STRUCTURE				
COMPONENT	TITLE	Credits Per Relevant NCQF Level			Total (Per Subject/ Course/ Module/ Units)
		Level [6]	Level [7]	Level [8]	
FUNDAMENTAL COMPONENT *Subjects/ Courses/ Modules/Units*					
CORE COMPONENT *Subjects/Courses/ Modules/Units*	Statistical inference			10	10
	Probability			10	10
	Statistical Analysis			30	30
	Multivariate Analysis			15	15
	Statistical Consultancy			15	15
	Project Report			15	15
ELECTIVE/ OPTIONAL COMPONENT *Subjects/Courses/ Modules/Units*	Any <u>two</u> courses from:				
	Mathematical Methods for Statistics			15	15
	Statistical Computing			15	15
	Agricultural Statistics			15	15
	Economics Statistics and National Accounts			15	15
	Advanced Survey Sampling			15	15
	Time Series Analysis and Forecasting			15	15
	Medical Statistics			15	15
	Econometrics			15	15
	Education Statistics			***15***	***15***

SUMMARY OF CREDIT DISTRIBUTION FOR EACH COMPONENT PER NCQF LEVEL	
TOTAL CREDITS PER NCQF LEVEL	
NCQF Level	***Credit Value***
8	125
TOTAL CREDITS	***125***
Rules of Combination: ***(Please Indicate combinations for the different constituent components of the qualification)***	
For a student to graduate with a Postgraduate Diploma in Statistics Programme, they must have acquired the following credits: - Core courses: 95 - Optional Courses: 30	

ASSESSMENT ARRANGEMENTS

All the assessments, formative and summative, leading/contributing to the award of credits or a qualification should be based on learning outcomes and/or sub-outcomes.

5.1 Formative assessment

The formative assessment shall comprise of two test and or assignments in total making 50% of the final mark.

5.2 Summative assessment

The summative assessment shall comprise of a Final Exam making 50% of the final mark. Therefore, the formative to summative assessment shall be weighted in the ratio 1:1.

MODERATION ARRANGEMENTS

The internal and external moderation will be done by BQA registered assessors and moderators. The assessment and moderation policies of the University aligned with that of BQA shall apply.

RECOGNITION OF PRIOR LEARNING

Candidates may submit evidence of prior learning and current competence and/or undergo appropriate forms of RPL assessment for the award of credits towards the in accordance with applicable university RPL policies and relevant national-level policy and legislative framework. Implementation of RPL shall also be consistent with requirements, if any, prescribed for the field or sub-field of study by relevant national, regional or international professional bodies.

CREDIT ACCUMULATION AND TRANSFER

CAT policy shall be applied.

PROGRESSION PATHWAYS (LEARNING AND EMPLOYMENT)

Horizontal Articulation (related qualifications of similar level that graduates may consider)

Postgraduate Diploma in Statistics graduates may prefer to qualify further in any allied discipline Bachelor of Science (Hon) in Statistics, and professional courses such as Actuarial Science, Chartered Financial Analyst, Professional Risk Management among others.

Vertical Articulation (qualifications to which the holder may progress to)
Master's degree in Statistics

Graduates will have requisite competencies and attributes to work as statisticians in all sectors of the economy be it private or public sectors.

The successful master's degree holders can be absorbed into a:

- Senior managerial supervisory positions in the statistics divisions
- Statistical Consultants for a varied client base
- Public and Private sectors such as Banks, Statistics Botswana, Ministry of Agricultural Development and Food Security, Ministry of Finance and Economic Development and many others.
- Academia in tertiary institutions and universities
- Data Science Specialists
- Researchers in research and academic based institutions

QUALIFICATION AWARD AND CERTIFICATION

Minimum requirements of achievement for the award of the qualification

A candidate who has completed 125 credits shall be eligible for the award of Postgraduate Diploma in Statisticss.

Certification

Candidates meeting prescribed requirements will be awarded a certificate in accordance with standards prescribed for the award of the qualification and applicable policies.

REGIONAL AND INTERNATIONAL COMPARABILITY

The Postgraduate Diploma in Statistics programme is generally comparable in terms of employment pathways with the regional and international qualifications considered. The pathways include the financial industry and both public and private sectors. The qualification facilitates both the vertical and horizontal articulation in the academic progression such as Master of Science in Statistics, Master of Science in Mathematical Statistics and Master of Commerce in Mathematical Statistics.

REVIEW PERIOD

The program will be reviewed every 5 years.